

Remarks

Claims 1 through 10 and 13 through 20 are now pending.

Claim 1 has been amended to clarify the extended mixing of the rubber composition at the temperature within 10°C of the predetermined mixing temperature.

The Rejection

The following individual U.S. Patent is relied upon to reject the Applicants' claimed invention:

	<u>U.S. Patents</u>
6,090,880	Zimmer, et al. (Zimmer)

Rejections Under 35 U.S.C. Section 112

Claims 1 through 10 and 13 through 20 have been rejected under 35 U.S.C. Section 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as the invention.

It is believed that the Examiner's objections under 35 U.S.C. Section 112, second paragraph, have been remedied by the amendments made to the Applicants' claim 1.

Indeed, it is believed that the process of the Applicants' amended claim 1 does provide a mixing step with the extended, temperature range dependency, sufficiently clear to obviate concerns as to whether such mixing step is open ended (without end) when taken with its temperature range limitation and the defined period of extended mixing where the mixing is ended by removal from the internal rubber mixer and allowed to cool to below 40°C.

Rejection Under 35 U.S.C. Section 103

Claims 1 through 20, prior to their amendment, have been rejected under 35 U.S.C. Section 103(a) as being obvious in view of Zimmer.

A reconsideration of the rejection of the Applicants' claims is requested in view of amendments made to the claims and comments herein.

The Invention

It is intended that the process of the Applicants' amended claim 1 now more clearly requires one mixing step to mix the rubber from less than 40°C to a predetermined temperature within a defined temperature range. In practice, the temperature of the rubber composition autogeneously rises to the predetermined temperature as it is being mixed in the internal rubber mixer, a feature well known to those having skill in such art.

The rubber composition itself is required to be comprised of elastomer(s), reinforcing filler comprised of carbon black which contains silica domains and, optionally, at least one additional reinforcing filler and a coupling agent.

After reaching the predetermined elevated mixing temperature, the mixing is continued at a temperature within 10°C of the predetermined elevated temperature over a sufficient period of time to promote further reaction of the coupling agent with the silica domains of the silica-containing carbon black at the elevated temperature.

Discussion

The Zimmer reference illustrates a mixing of a tin coupled, or tin capped, diene-based rubber composition which contains a silicon-modified carbon black reinforcement. The ingredients are mentioned to be mixed in at least two stages, namely at least one non-productive mix stage followed by a productive mix stage in which sulfur and curative(s) are added. The temperature in the non-productive mixing stage(s) is allowed to reach a temperature between 140°C and 190°C.

However, there is no teaching or suggestion in Zimmer to provide the Applicants' required extended mixing within 10°C of a predetermined elevated temperature for a period of time to promote further reaction of the coupling agent with the silica domains of the silica-containing carbon black. Indeed, it is contended that it would be entirely speculative for assuming that Zimmer uses such extended mixing procedure for its process.

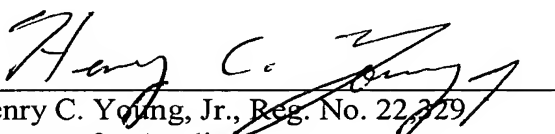
Accordingly, it is contended that the disclosure of the Zimmer reference is materially deficient insofar as teaching or suggestion the process of the Applicants' amended claim 1 in the sense of 35 U.S.C. Section 103.

Moreover, it is contended that the Zimmer reference disclosure does not make out a prima facie case of obviousness of the process of the Applicants' amended claim 1 without a significant reconstruction of the Zimmer reference to include the Applicants' extended, temperature-dependent mixing aspect of promoting further reaction between the coupling agent and silica domains on the carbon black which would not be motivated by one having skill in the pertinent art to do so in the sense of 35 U.S.C. Section 103(a) in the absence of the Applicants' own specification and claims.

Conclusion

In view of the amendments made to the claims and comments herein it is contended that the process of the Applicants' amended claims are not obvious in view of Zimmer in the sense of 35 U.S.C. Section 103(a) and that a prima facie case of obviousness of the Applicants' process claims is not made out.

Respectfully submitted,


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